

**ABSTRACT OF THE DISCLOSURE**

An composition exhibiting a desired value of magnetic susceptibility, which can be used to fabricate components in an NMR device, and method thereof, wherein the composition  
5 comprises a metal ion selected from the group consisting of  $Gd^{+3}$ ,  $Fe^{+3}$  and  $Mn^{+2}$  and an amorphous material using a ligand or chelating agent to solubilize the metal ion throughout the amorphous material, wherein the magnetic susceptibility of the composition exhibits a desired value at cryogenic temperatures such as nearly zero susceptibility at temperatures at or below  $77^{\circ} K$ .